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08954291BA

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CD(s) containing:

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Doc Code: Computer

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Artifact Type Code: P

pages of specification

and/or sequence listing

and/or table

Doc Code: Artifact

☐

Artifact Type Code: S

content unspecified or combined

Doc Code: Artifact

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Artifact Type Code: U

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☐

Microfilm(s)

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Video tape(s)

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The  
United  
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The Commissioner of Patents  
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*Has received an application for a patent  
for a new and useful invention. The title  
and description of the invention are en-  
closed. The requirements of law have  
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shall be granted under the law.*

*Therefore, this*

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*Grants to the person or persons having  
title to this patent the right to exclude  
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as provided by law.*

*Bence Lehman*

Commissioner of Patents and Trademarks

*Janet A. Morton*  
Attest



US005458483A

United States Patent [19]  
Taylor

[11] Patent Number: 5,458,483  
[45] Date of Patent: Oct. 17, 1995

[54] OXYGEN-FUEL BURNER WITH INTEGRAL  
STAGED OXYGEN SUPPLY

5,092,760 3/1992 Brown et al.  
5,269,679 12/1993 Syska et al.

#### OTHER PUBLICATIONS

*North American Combustion Handbook*, A Basic Reference on the Art and Science of Industrial Heating with Gaseous and Liquid Fuels, vol. 1: Combustion, Fuels, Stoichiometry, Heat Transfer, Fluid Flow, Third Edition, "Oxygen Enrichment", pp. 76-79.  
*Combustion Technology Manual*, Fourth Edition, 1988, "Oxygen-Enriched and Oxy-Fuel Combustion", pp. 316-327.

Primary Examiner—Larry Jones  
Attorney, Agent, or Firm—Barnes & Thornburg

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[73] Assignee: Maxon Corporation, Muncie, Ind.

[21] Appl. No.: 163,424

[22] Filed: Dec. 8, 1993

#### Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 92,008, Jul. 15, 1993, Pat. No. 5,431,559.

[51] Int. Cl.<sup>6</sup> ..... F23M 9/00

[52] U.S. Cl. .... 431/350; 431/9; 431/115;  
431/351

[58] Field of Search ..... 431/350, 9, 115,  
431/190, 183, 351, 353

[56] References Cited

#### U.S. PATENT DOCUMENTS

4,690,635 9/1987 Coppin  
4,986,748 1/1991 Brown et al.

#### [57] ABSTRACT

A burner assembly is provided for combining oxygen and fuel to produce a flame. The burner assembly includes a burner block formed to include a flame chamber having inlet and outlet openings, a bypass structure for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber and structure for discharging fuel into the flame chamber formed in the burner block.

68 Claims, 5 Drawing Sheets

